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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/766,787

01/28/2004

Shaomin Samuel Mo

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EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

01/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/766,787	Applicant(s) MO ET AL.	
	Examiner Freshteh N. Aghdam	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-12 and 14-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-12, and 14-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claim 1-3, 6-12, and 14-27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claims 2-3, 6, 8-9, 12, 14, 16-17, 19, 21-22, 24, and 26-27 are objected to because of the following informalities:

As to claims 2-3, 6, 8-9, 12, 14, 17, 19, 21-22, 24, and 26-27, the phrase "the first band" and the phrase "the second band" lack antecedent basis.

As to claims 8-9, 16, 21-22, and 26, the phrase "the portion of the input bit stream" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicant claims a computer readable carrier including software. On page 18, paragraph 72, applicant discloses "This software may

be embodied in a computer readable carrier, for example, ..., or an audio frequency, radio frequency, or optical carrier wave."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 6-7, 9-10, 12, 14-15, 18-20, and 23-25 are rejected under 35 U.S.C. 102 (e) as being anticipated by Gan et al (US 2006/176850).

As to claims 1, 3, 10, 12, 18-19, 23-24, Gan discloses a method of and/ or an apparatus for improving data transmission to a receiver utilizing multiple bands (Abstract; Par. 177-178) comprising: mapping a bit stream within the data stream to the multiple bands in a first band order (Par. 56); mapping the bit stream to the multiple bands in a second band order (responsive to the reception of the error indicator from the receiver; Par. 62 and 111-112); and transmitting the bit stream in the first band order and the bit stream in the second band order for receipt by the receiver (Fig. 1A; Par. 56, 62, and 111-112).

As to claims 6 and 14, Gan discloses that the bit stream is mapped to the first band order in a frame time and the bit stream is mapped to the second band order in a

subsequent frame time to the frame time in which the bit stream is mapped to the first band order (e.g. in response to retransmission request; Fig. 1A; Par. 56, 62, and 111-112).

As to claims 7, 9, 15, 20, and 25, Gan discloses a method of and/ or an apparatus for improving data transmission to a receiver utilizing multiple bands comprising: mapping an input bit stream within the data stream to multiple bands in a first band order and the portion of the input bit stream to multiple bands in a second band order (Fig. 1A; Par. 56, 62, and 111-112); receiving the bit stream in the multiple bands during a first transmission and an other bit stream in the multiple bands during a second transmission, the received bit streams corresponding to the input bit stream (Fig. 1A; Par. 56, 62, and 111-112); demapping the received bit stream according to the first band order to obtain a first band order bit stream corresponding to the input bit stream (Fig. 1A; Par. 56, 62, and 111-112); inherently demapping the second band including the other bit stream to obtain a second band order bit stream corresponding to the second bit stream (e.g. responsive to the error detection result of the first band; Fig. 1A; Par. 56, 62, and 111-112); and inherently processing the first and second band bit streams to yield the portion of the input bit stream (Fig. 1A; Par. 56, 62, and 111-112).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, and further in view of Ho (US 2004/0170217).

As to claims 2 and 11, Gan discloses at least a frequency hopping system that operates in accordance with the subject matter of claims 1 and 10 cited above. However, Gan does not expressly disclose that multiple bands in the first and second band orders are selected from the ultra wideband (UWB) channel. One of ordinary skill in the art would recognize that it would have been obvious to one of ordinary skill in the art to utilize the combination of frequency hopping with UWB in order to transmit large amounts of digital data over a wide spectrum of frequency bands with very low power as it is evidenced by Ho (Par. 4). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Ho with Gan for the reason stated above.

Claims 8, 16-17, 21-22, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, and further in view of Son et al (US 2003/0189892).

As to claims 8, 16-17, 21-22, and 26-27, Gan discloses receiving symbols mapped in the first band order and symbols mapped in the second band order (e.g. by requesting retransmission) and processing the symbols to yield the input bit stream. Gan is not explicit about combining symbols mapped in the first band order with the symbols mapped in the second frequency band order; and processing the combined symbols to yield the input bit stream. Son discloses a method and/ or apparatus for data

recovery utilizing retransmission request protocol, wherein the symbols of the retransmission signal is combined with the initial transmission signal prior to decoding (e.g. recovering the original transmitted signal; Par. 35). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Son with Gan in order to increase possibility of successful decoding by combining the previously transmitted signal(s) with the current retransmitted signal(s).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is 571-272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Freshteh Aghdam
Examiner
Art Unit 2611

January 2, 2008

A handwritten signature in black ink, appearing to read 'Chieh M. Fan', with a stylized flourish at the end.

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER